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Manganiferous Soil Concretions from Hawaii: A Comment[1]

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Glasby, Rankine, and Meylan (1979, Figure 2*c*) presented scanning electron micrographs of the fractured internal surface of a manganiferous concretion from a Hawaiian soil, showing hexagonal platelets with sides of about 4 μm and thickness 1 μm. They noted that "these crystal sizes are large considering the usual cryptocrystallinity of natural ferromanganese oxide minerals." Taylor, McKenzie, and Norrish (1964) also stressed the extreme smallness of the crystallite size of the manganese minerals in nodules in Australian soils, and they estimated the birnessite particles to be about 0.02 μm in thickness. Despite the discrepancy in dimensions, Glasby et al. (1979) suggested that the hexagonal plates were birnessite.

Glasby et al. (1979) also stated that kaolinite was a major constituent of their sample. This mineral commonly occurs in hexagonal platelets of this size, and the electron micrographs bear a remarkable resemblance to the many examples of this mineral appearing in the literature in recent years. It is therefore likely that the hexagonal platelets shown in fact are not birnessite, but kaolinite.

[1] Manuscript accepted 1 October 1982.

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LITERATURE CITED

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